

IN THE CLAIMS:

Claims 19-23 and 26 were previously amended, Claims 1, 2-5, 8, 15, 17, and 27 are currently amended, Claim 14 is cancelled, and Claims 2-7, 9-13, 16, 18 and 24-25 remain in this application.

1 1. (Amended) A plasma display panel manufacturing method comprising:
2 a phosphor layer forming step for forming phosphor layers on at least one of: a
a4 3 main surface of a front panel facing a back panel; and a main surface of the back panel facing the
4 front panel;
5 a sealant layer forming step for forming a sealant layer on at least one of: a
6 peripheral region of the main surface of the front panel facing the back panel; and a peripheral
7 region of the main surface of the back panel facing the front panel; and
8 a sealing step for sealing, following the phosphor layer forming step and the
9 sealant layer forming step, the front panel and the back panel that have been placed facing each
10 other so that an inner space is surrounded by the sealant layer, by heating in a dry gas
11 atmosphere the sealant layer to a temperature that is equal to or higher than a softening point of
12 the sealant layer so as to soften the sealant layer,
13 wherein when the sealant layer is formed in the sealant layer forming step, a
14 shape of the sealant layer is set so as to provide at least one gap between the peripheral regions
15 of the front panel and the back panel when the front panel and the back panel are placed facing
16 each other, the at least one gap allowing gas to pass between the inner space between the panels
17 that is surrounded by the sealant layer and an outside of the panels, and

18 in the sealant layer forming step, the sealant layer is formed with either plural
19 protrusions or plural depressions in at least one part of the sealant layer at certain intervals
20 formed on the at least one of the peripheral regions of the panels.

1 2. (Amended) The plasma display panel manufacturing method of Claim 4 29,
2 wherein

3 in the sealant layer forming step, the sealant layer is formed with either
4 ~~a protrusion~~ plural protrusions or ~~a depression~~ or plural depressions in at least one part of the
5 sealant layer formed at predetermined intervals on the at least one of the peripheral regions of the
6 panels to provide the spaced open gaps.

1 3. (Amended) The plasma display panel manufacturing method of Claim 2 1,
2 wherein

3 a height of the protrusion or a depth of the depression formed in the sealant layer
4 in the sealant layer forming step is 300 μm or more.

1 4. (Amended) The plasma display panel manufacturing method of Claim 2 1,
2 wherein

3 the sealant layer is formed in the sealant layer forming step so that the part of the
4 sealant layer in which the ~~protrusion~~ protrusions are provided is narrower than other parts of
5 the sealant layer.

1 5. (Amended) The plasma display panel manufacturing method of Claim 2 1,
2 wherein
3 the sealant layer is formed in the sealant layer forming step so that the part of the
4 sealant layer in which the ~~depression is~~ depressions are provided is wider than other parts of the
5 sealant layer.

A4 1 6. (Original) The plasma display panel manufacturing method of Claim 1, wherein
2 in the sealant layer forming step, the sealant layer is formed around one of the
3 peripheral regions of the facing main surfaces of the front panel and the back panel, and
4 the sealant layer is formed on at least one part of the other one of the peripheral
5 regions of the facing main surfaces of the front panel and the back panel.

6 7. (Original) The plasma display panel manufacturing method of Claim 6, wherein
7 a thickness of the sealant layer formed on the other one of the peripheral regions
8 of the facing main surfaces of the front panel and the back panel is 300 μm or more.

1 8. (Amended) The plasma display panel manufacturing method of Claim 1, wherein
2 the sealant layer is formed in the sealant layer forming step so that a part of the
3 sealant layer in which the at least one gap is provided is wider than other parts of the sealant
4 layer in which the gap is not provided.

1 9. (Original) The plasma display panel manufacturing method of Claim 1, further
2 comprising,
3 a partition forming step for forming partitions respectively along an outer edge
4 and an inner edge of a region where the sealant layer is formed on the at least one of the
5 peripheral regions of the facing main surfaces of the front panel and the back panel.

a4 1 10. (Original) The plasma display panel manufacturing method of Claim 1, wherein
2 a softening point of the sealant layer formed in the sealant layer forming step is
3 410°C or higher.

1 11. (Original) The plasma display panel manufacturing method of Claim 1, wherein
2 a difference between a highest temperature at which the panels are heated in the
3 sealing step and a softening point of the sealant layer is 40°C or less.

1 12. (Original) The plasma display panel manufacturing method of Claim 1, wherein
2 when the sealant layer is heated in the sealing step, the sealant layer is heated at a
3 temperature no lower than 250°C but below the softening point of the sealant layer for at least 10
4 minutes, and then is heated to a temperature of the softening point or higher.

1 13. (Original) The plasma display panel manufacturing method of Claim 1, wherein
2 the sealant layer formed in the sealant layer forming step includes a glass with a
3 low melting point.

1 14. (Cancelled)

1 15. (Amended) The plasma display panel manufacturing method of Claim 14 1,
2 wherein
3 the dry gas includes oxygen.

4 16. (Original) The plasma display panel manufacturing method of Claim 15, wherein
5 the dry gas is dry air.

at 1 17. (Amended) The plasma display panel manufacturing method of Claim 14 1,
2 wherein
3 a partial pressure of steam included in the dry gas atmosphere is 130Pa or lower.

1 18. (Original) The plasma display panel manufacturing method of Claim 1, wherein
2 the phosphor layers formed in the phosphor layer forming step include a blue
3 phosphor layer composed of BaMgAl₁₀O₁₇: Eu.

1 19. (Previously Amended) A plasma display panel that is manufactured using the
2 plasma display panel manufacturing method of any of Claim 1.

1 20. (Previously Amended) A plasma display panel that is manufactured using the
2 plasma display panel manufacturing method of any of Claim 1, and that includes a plurality of
3 cells in each of which a blue phosphor layer is formed, wherein
4 a chromaticity coordinate y in the CIE color specification of luminescent color of
5 light emitted from the cells in each of which the blue phosphor layer is formed when light is
6 emitted from only the cells is 0.08 or lower.

1 21. (Previously Amended) A plasma display panel that is manufactured using the
2 plasma display panel manufacturing method of any of Claim 1, and that includes a plurality of
3 cells in each of which a blue phosphor layer is formed, wherein
4 a peak wavelength of a spectrum of light emitted from the cells in each of which
5 the blue phosphor layer is formed when light is emitted from only the cells is 455nm or shorter.

at 1 22. (Previously Amended) A plasma display panel that is manufactured using the
2 plasma display panel manufacturing method of any of Claim 1, and that includes a plurality of
3 cells, wherein
4 a color temperature of luminescent color of light emitted from the cells when light
5 is emitted from all the cells under the same power condition is 9000K or higher.

1 23. (Previously Amended) A plasma display panel that is manufactured using the
2 plasma display panel manufacturing method of any of Claim 1, and that includes a plurality of
3 cells in which phosphor layers including a blue phosphor layer and a green phosphor layer are
4 formed, wherein
5 a ratio of a peak intensity of a spectrum of light emitted from the cells in each of
6 which the blue phosphor layer is formed to a peak intensity of a spectrum of light emitted from
7 the cells in each of which the green phosphor layer is formed, when light is emitted, under the
8 same condition, from the cells in each of which one of the blue phosphor layer and the green
9 phosphor layer is formed is 0.8 or higher.

1 24. (Original) A plasma display panel that is manufactured using the plasma display
2 panel manufacturing method of Claim 18, and that includes a plurality of cells in each of which a

3 blue phosphor layer is formed, wherein a ratio of c-axis length to a-axis length of $\text{BaMgAl}_{10}\text{O}_{17}$:
4 Eu is 4.0218 or smaller.

1 25. (Original) A plasma display panel that is manufactured using the plasma display
2 panel manufacturing method of Claim 18, and that includes a plurality of cells in each of which a
3 blue phosphor layer is formed, wherein

4 when $\text{BaMgAl}_{10}\text{O}_{17}$:Eu is analyzed with a thermal desorption analysis method, a
5 peak value in the number of molecules contained in H_2O desorbed from $\text{BaMgAl}_{10}\text{O}_{17}$:Eu at
6 200°C or higher is $1 \times 10^{16}/\text{g}$ or smaller.

1 26. (Previously Amended) An image display apparatus that includes a plasma display
2 panel manufactured using the plasma display panel manufacturing method of any of Claim 1,
3 and a driving circuit.

1 27. (Amended) A plasma display panel sealing apparatus for sealing a front panel
2 and a back panel that have been placed facing each other with a sealant layer between outer
3 regions of the panels, by heating the panels and the sealant layer, comprising,

4 a gas circulating unit for ~~circulating~~ directing heating gas ~~from~~ to sides of the
5 panels so as to circulate the heating gas from the outer regions of the panels to an inner space
6 between the panels.

1 28. (New) In a plasma display panel manufacturing method for providing an
2 improved plasma display panel with cells of phosphor layers including a blue phosphor layer
3 with an improved chromaticity coordinate, the improvement comprising the steps of:

4 forming a sealant layer, about a peripheral region of main surfaces of a front panel
5 and a back panel facing each other to provide cells of phosphor layers, the sealant layer is

6 arranged in contact with both the periphery of the front panel and back panel to provide a
7 plurality of spaced open gaps about the periphery to provide egress to an open space containing
8 the cells between the facing front panel and back panel;

9 circulating a dry gas, wherein a partial pressure of steam included in the dry gas
10 atmosphere is 130 Pa or lower, through the spaced open gaps to remove any absorbed gases from
11 the manufacturing of the front panel and back panel;

12 initially heating the entire facing front panel and back panel to release the
13 absorbed gases while circulating the dry gas through the spaced open gaps; and

14 continuing the heating of the entire facing front panel and back panel at a
15 temperature to soften the sealant layer sufficiently to gradually close the spaced open gaps while
16 maintaining the circulation of the dry gas until the peripheral region is sealed wherein the
17 chromaticity coordinate, y , in the CIE color specification of luminescent color of light emitted
18 from only cells including the blue phosphor layer is 0.08 or lower.

1 29. (New) The plasma display panel manufacturing method of Claim 28 further
2 including the step of moving the facing front and back panels with the sealant open gaps through
3 an oven while directing dry gas through nozzles toward side peripheral regions including the
4 spaced gaps as the spaced gaps are gradually closed by an application of pressure.

1 30. (New) The plasma display panel manufacturing method of Claim 29 wherein the
2 height of the opening gap between the front and back panel is greater than 300 μm .